The NAS/NRC Decadal Survey of Solar and Space Physics: A Vision for the Future Use of Heliophysics Models and Observational Data

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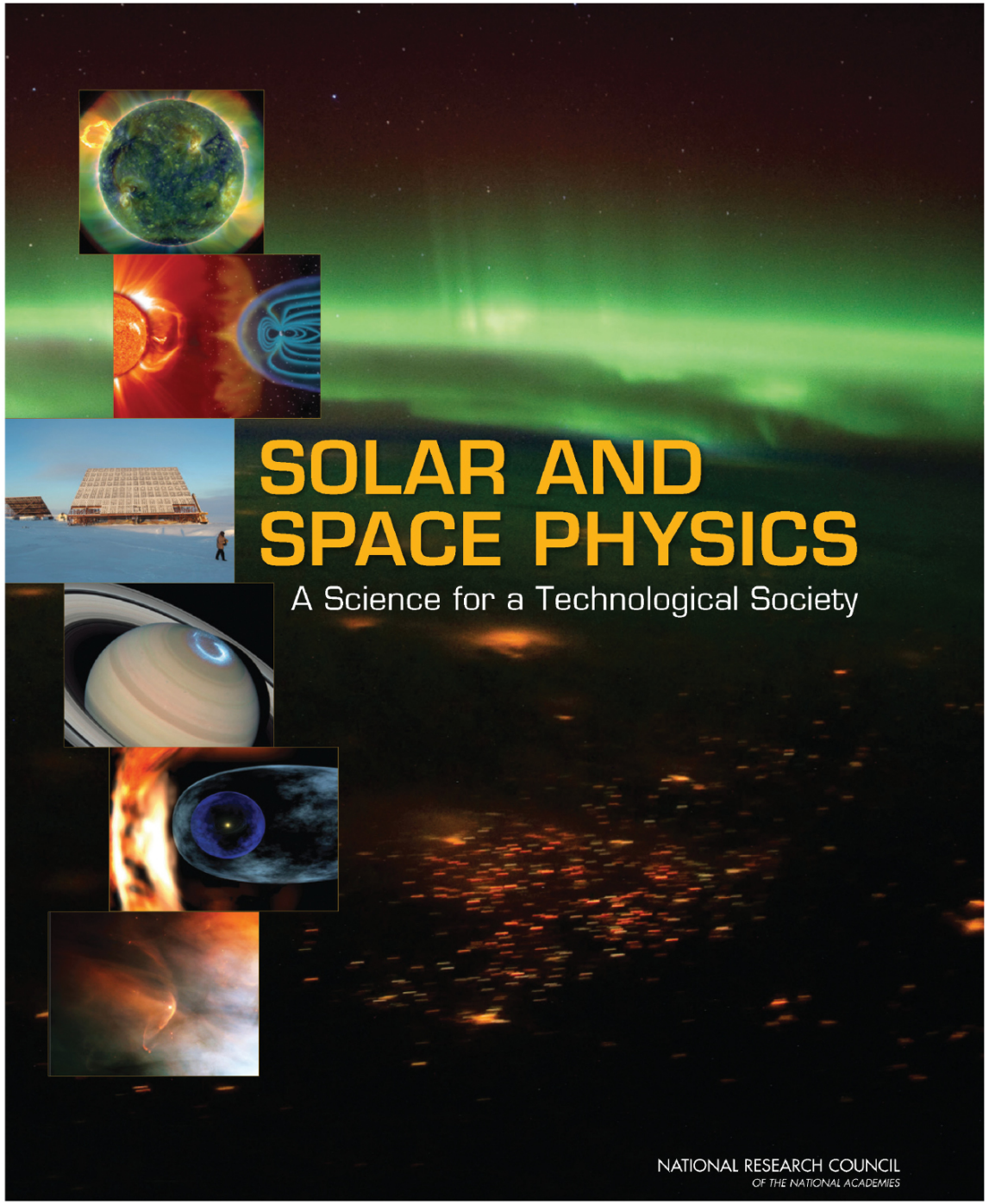

The National Research Council of the National Academy of Sciences produces a report every 10 years, drawing on everyone in the community for input, to **provide direction for the next decade of Solar and Space Physics research.** The current plan is for 2013-2022.

The "Decadal Surveys" form the basis for the relevant work of NASA, NSF, NOAA and other US agencies in terms of mission selection and scientific direction, and are taken seriously as a **blueprints for action**. International collaboration is an integral part of the picture.

Solar and Space Physics: A Science for a Technological Society: "DRIVE Initiative" (complements missions)

A low-cost initiative, DRIVE provides high leverage to current and future space science research investments with a diverse set of science-enabling capabilities. The five DRIVE components are as follows:

- **D**iversify observing platforms with microsatellites and midscale ground-based assets.
- **Realize scientific potential by sufficiently funding operations and data analysis.**
- Integrate observing platforms and strengthen ties between agency disciplines.
- **V**enture forward with science centers and instrument and technology development.
- **E**ducate, empower, and inspire the next generation of space researchers.

Appendix B.3 “Data Systems”
B.3.2 Future Goals and Directions

- “NASA has already taken the important first step in integrating many of these datasets and tools to form the Heliophysics Data Environment (HPDE). The main objective of the HPDE is to implement *a distributed, integrated, flexible data environment*. HPDE modeling centers should serve as a sound *foundation for a future, fully integrated Heliophysics data and modeling center.”*
- *Current HPDE/CCMC direction:* Provide **unfettered discovery and access (via *uniform metadata and APIs*)** to **all** HP ***datasets and models*** from **distributed sources** in a ***uniform, standardized formats***.
- *A Decadal Survey goal*: “The ability to perform simulations **interactively** with each other [and with observations] and to **couple different models** to track ongoing space-weather events.” [for a future exaflop quantum computer]